

a first sensor input connected to a first tunneling magneto-resistive (TMJ) cell, the first TMJ cell including a first resistance;

a second sensor input connected to a second TMJ cell, the second TMJ cell including a second resistance; the second TMJ formed complimentary to the first MJT cell; and

a detector for sensing a change in resistance of the first TMJ cell and the second TMJ cell
the resistive change is ^{sensed} sense by sampling a resistive state of the first TMJ cell and the second TMJ cell at a first time t1, and sampling the resistive state of the first TMJ cell and the second TMJ cell at a second time t2.

14. (Original) The device of claim 13, wherein the resistive state sampled at first time t1 is stored in a first latch, and the resistive state sampled at the second time t2 is stored in a second latch.

15. (Original) The device of claim 14, wherein an output of the first latch and an output of the second latch are exclusively OR'd by an exclusive OR gate generating a device output.

16. (Original) The device of claim 14, wherein the first latch and the second latch comprise transistors that are formed so that the first latch and the second latch can latch non-standard voltage potential input signals while providing output signals that are standard voltage potential signals.

17. (Original) A memory apparatus comprising an array of MRAM cells; a write current generator for generating a write current for selectively writing to MRAM cells within the array of MRAM cells; a complimentary pair of test MRAM cells additionally coupled to the write current of the write current generator; a complimentary MRAM cell resistive state sensor connected to the complimentary pair of test MRAM cells for detecting a change in resistance of the complementary pair of test MRAM cells.

18. (Original) The apparatus of claim 17, wherein the write current includes pulses that alternate in polarity.

19. (Original) The apparatus of claim 17, wherein the complimentary pair of test MRAM cells includes a first MRAM cell and a second MRAM cell, wherein the first MRAM cell and a second MRAM cell are load resistors of a cross-coupled pair of transistors forming a differential pair amplifier of the complimentary MRAM cell pair resistive state sensor.

second time t2 is stored in a second latch.

7. (Original) The resistance change sensor of claim 6, wherein an output of the first latch and an output of the second latch are exclusively OR'd by an exclusive OR gate generating the sensor output.

8. (Original) The resistance change sensor of claim 6, wherein the first latch and the second latch comprise transistors that are formed so that the first latch and the second latch can latch non-standard voltage potential input signals while providing output signals that are standard voltage potential signals.

9. (Cancelled).

10. (Cancelled).

30 ~~11.~~ (Currently Amended) ~~The device of claim 9,~~ A magnetic sensing device comprising:
a first sensor input connected to a first tunneling magneto-resistive (TMJ) cell, the
first TMJ cell including a first resistance;

a second sensor input connected to a second TMJ cell, the second TMJ cell
including a second resistance; the second TMJ formed complimentary to the first TMJ
cell; and

a detector for sensing a change in resistance of the first TMJ cell and the second
TMJ cell

wherein the first TMJ cell is formed complimentary to the second TMJ cell.

12. (Currently Amended) ~~The device of claim 9,~~ A magnetic sensing device comprising:

a first sensor input connected to a first tunneling magneto-resistive (TMJ) cell, the
first TMJ cell including a first resistance;

a second sensor input connected to a second TMJ cell, the second TMJ cell
including a second resistance; the second TMJ formed complimentary to the first TMJ
cell; and

a detector for sensing a change in resistance of the first TMJ cell and the second
TMJ cell

wherein the first TMJ cell and the second TMJ cell are load resistors of a cross-coupled pair of transistors forming a differential pair amplifier of the magnetic sensing device.

13. (Currently Amended) ~~The device of claim 9,~~ A magnetic sensing device comprising: